

What is claimed is:

1. A method for modeling different internal structures of a head, such as different parts of the brain, in order to focus magnetic stimulation and/or visualize the results of magnetic stimulation, MEG or EEG, the method comprising the step of
  - determining the location of the internal structures, such as the different cerebral parts, of at least one first head (B) in a three-dimensional space by technical means, e.g., magnetic resonance imaging or computer-aided tomography,**characterized** in that
  - the external dimensions of at least one second head (A) are determined, and
  - the location data of said internal structures of said first head (B) are scaled in a three-dimensional space to correlate with said external dimensions of said second head (A), whereby the location data of the internal structures of said second head (A) also become modeled without the need for anatomical images of said second head (A).
2. The method of claim 1, **characterized** in that the method is utilized in the focusing of magnetic stimulation and/or visualization of results obtained by magnetic stimulation, MEG or EEG.
3. The method of any one of foregoing claims, **characterized** in that said location data is displayed in an image format and the scaling thereof is implemented by mutual moving of individual pixels.
4. The method of any one of foregoing claims, **characterized** in that the response recorded by MEG or EEG or, alternatively, the effective stimulating field of TMS is localized in relation to anatomical marker points determined on the head surface.
5. The method of any one of foregoing claims, **characterized** in that the measurement system of the external head dimensions is based on the use of infrared light,

electromagnetic fields, laser light or a pointer equipped with electrical position sensor means.

- 5 6. The method of any one of foregoing claims, **characterized** in that the image scaling algorithm includes an optional scaling facility that in the scaled set of superposed images adjusts the distance from the cortex to the scalp to a value typical for the person being examined in a cohort of persons of the same age.
- 10 7. The method of any one of foregoing claims, **characterized** in that, in addition to head surface marker points or in lieu thereof, the deformation operation is carried out utilizing the location data of such functional points of the brain that, without using magnetic resonance imaging, can instead be localized with the help of magnetic stimulation, MEG or EEG as functional points of the brain.
- 15 8. The method of any one of foregoing claims, **characterized** in that the image deformation is performed using a minimizing algorithm that minimizes the mutual distances between the respective points of the deformed image of head (A) and the points measured on the surface of a second person's head (B).
- 20 9. The method of any one of foregoing claims, **characterized** in that the computation results of the minimization algorithm are accepted even when the mutual distances between respective image points are not reduced to zero.
- 25 10. The method of any one of foregoing claims, **characterized** in that the method is utilized for visualizing in a layman fashion the results of TMS, EEG or MEG examinations performed on a patient having no magnetic resonance images of his/her head available.
- 30 11. The method of any one of foregoing claims, **characterized** in that the method is utilized in the display of results in a single set of MR images obtained from measurements performed on a plurality of test persons.

12. The method of any one of foregoing claims, **characterized** in that the standard head used in the method is selected from a library of plural magnetic resonance images taken from a plurality of persons representing heads of different types and shapes.

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13. The method of any one of foregoing claims, **characterized** in that linear scaling is used in the method.

14. The method of any one of foregoing claims, **characterized** in that nonlinear  
10 scaling is used in the method.